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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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IMMUNISATION AGAINST EPIZOOTIC ABORTION.

An abstract from the Oxfordshire County Council's report upon this subject appears on another page, and will be of interest to every country practitioner. This is the second report which the Oxfordshire County Council has issued; and, taking it in conjunction with the reports from other counties which have tried immunisation, it may fairly be said that the further we go with the experiments the more favourable the prospects appear. No scientific man would yet call the question definitely settled. The known tendency of the disease to "wear itself out" and the coincidence of hygienic and prophylactic measures with the immunisation, are two factors which may quite conceivably be affecting the returns more or less; and the number of herds reported upon is not as yet very large. But, so far the results justify the highest hopes; and the continued experiments now on foot in Oxfordshire and elsewhere ought to be taken up in every other county where epizootic abortion exists. The Board of Agriculture is ready to do its share of the work anywhere; the rest depends upon local authorities and farmers, and perhaps most of all upon their veterinary advisers, who now have sufficient evidence to justify them in urging the use of similar measures.

COUNTRY PRACTICE.

It is difficult to prophesy what will happen in veterinary practice after the war, beyond saying broadly that, for some years at least, times are likely to be harder with us than they have been during the war itself. But there seems to be ground for the belief that country practice, as compared with town practice, may become much more important than it has been for a long time. Various reasons have led young members in particular—and some older ones—to look askance at country practice during the last fifteen or twenty years, and many have done so unduly. Various other reasons—among them the growing individual value of our national farm stock, warrant the hope that country practice will undergo a healthy new development after the war. It is to be hoped, indeed, that it will be so; for it is quite certain that town practice will be at a discount for some time to come. On the whole, a young member able and willing to do the rough work of a country practice will be well advised to choose that in preference to town. Two reasons have accounted for many past failures in country practice—entering it when unfitted for it; and trying to shirk its roughest and least directly lucrative portions. Both are disastrous; but the right man is always sure of a living in the country.

EPSOM SALTS.

By W. R. DAVIS, M.R.C.V.S., Enfield.

The common practice of administering to cattle pound doses of Epsom salts (or the equivalent in the shape of somebody's coloured drench) is, to my mind, fraught with great danger to the animals, and is, I am convinced, responsible for innumerable deaths among cows every year. I arrived at this conclusion a very long time ago, and ceased to employ mag. sulph. as an aperient for cows.

Scarcely a month passes but I get confirmation of this opinion. A cow goes off her feed, or picks just a little, ceases to ruminate, gives less than half her usual quantity of milk, and passes little fæces, or perhaps none—she is said to have caught a chill. She receives a pound of salts or a packet of Cerulean drench (coloured salts). Next day she is no better and the dose is repeated. On the following day one of two things happens. The medicine acts as an aperient and the cow recovers, or (and this is a frequent sequence) she is still found to be very ill. She rises with difficulty, there is trembling of the skin covering the hind parts, the eyes are retracted, eyelids partly closed, tears run over the face, a grunt accompanies each respiration: the brain is implicated—a condition of partial coma or of excitement is observed, and that night or the following day, the patient is dead.

Post-mortem. An impacted rumen and violent inflammation of that viscus.

Several clients of mine, owners of large herds of dairy cows, to whom I have pointed out this danger, though at first sceptical as to the validity of my conclusion (since they, and perhaps their fathers before them, had for years used this remedy), are now firmly convinced of its truth, and never employ salts as an aperient for cows. Quite recently a very large dairy farmer said to me, "Since I have stopped using salts we never seem to get any of those cases where a cow with stoppage goes off her head and knocks about, or gets sleepy like a cow with drop." It seems likely that large doses of sulphate of magnesia poison by a local irritation of the mucous membrane of the stomach, and, after absorption, by paralysing the nervous system. I never go to a case of milk fever where salts have been given as calving drink but I know I am in for trouble. A not uncommon result is apparent recovery in six or eight hours, and pneumonia and death a few days after.

Women cattle drivers have already made their appearance, the first notified being at High Wycombe Market.

COW POISONED BY STRYCHNINE.

A big, strong, cross-bred cow, a heavy milker, was found to be suffering from impaction of the rumen: there was partial loss of appetite, constipation, and difficulty in getting up. A purgative was given, which operated well, and next day the cow seemed brighter but quite unable to rise: appetite and rumination good.

Gave 2 grs. strychnine hydrochlor. (B. W. & Co.) hypodermically.

Next day condition of patient the same: repeated the strychnine.

About an hour after injection each day the owner observed slight muscular tremors, hardly noticeable, which very soon passed off.

On the following day the patient would eat anything. Rumination regular, bowels acting well; looked quite well, but was quite unable to move hind quarters. Repeated the 2 grs. strychnine. Result—violent tetanic spasms and death in ten minutes.

I might add that I have used strychnine often in similar cases in cows during the last 40 years, the dose has never been less, and sometimes more, but this is my first unpleasant experience with that drug.

COUNTRY VET.

LOSS OF HOOF BY ACCIDENT.

Mr. Penhale, when he recorded this case in your number dated July 22nd, asks if any other practitioners have seen similar cases.

I happened to have one very similar to his last winter. A message was sent to me stating that "a polo pony has lost its hoof through being run over by a motor lorry."

When I arrived I found the pony standing by the road-side, and the hoof together with the shoe torn off intact.

It appeared that the pony was being led beside another horse, and in passing the motor lorry the wheel had gone over the foot; this caused the pony to rear, and thus the hoof was pulled off.

The treatment consisted of usual antiseptic dressings, and a leather boot to protect and keep the dressings in place. No slings were used (none being available), and the pony began to put weight on the leg after about ten days.

After about three months an almost perfect frog and sole had grown, and the wall grown down for about an inch and a half. After this I lost sight of the horse, but at that time it was able to walk moderately well, and would, I believe, make a useful recovery.

M. V. S.

REMOVAL OF SILVER STAINS.—A thorough rubbing with a salt grease, such as bacon grease, followed by soap and water, will, says a writer in an American medical journal completely remove all traces of colour on skin or clothes produced by silver, argyrol being mentioned in particular.

ABSTRACTS FROM FOREIGN JOURNALS.

LOCAL ANTHRAX IN THE PIG.

Elsaesser and Liebe have published an article upon this condition (*Zeitschr. f. Fleisch. u. Milch. hygiene*). According to them, anthrax occurs in pigs far more frequently than was supposed up to a few years ago. In Bremen, for example, only three cases were demonstrated in 1904-1907, nine in 1908, ten in 1909, 16 in 1910, 55 in 1911, and 80 in two months of 1912. Generally the cases are met during meat inspection of well-nourished animals fit for the butcher and appearing healthy clinically; the disease is rarely seen in pigs that have been slaughtered on account of illness. Cases where the disease runs a chronic mild course and the anatomical lesions are local predominate; those of anthrax-septicæmia are rare. In 1911 only two cases of the septicæmic form were demonstrated, 33 cases of pharyngeal anthrax, and 19 of intestinal anthrax. In meat inspections, especial attention should be paid to lesions of the lymphatic glands of the head and mesentery.

An acutely infected lymphatic gland is dark red; its sectioned surface is brick-red to purple-red, with black-red spots up to the size of a lentil in the tissues. The sectioned surface is moist, but not shining, and in the later stages is uniformly brick-red. Finally the gland becomes necrotic and friable, and in many cases purulent breaking down and abscess formation occurs. The neighbouring fatty tissue shows sero-gelatinous infiltration, or in other cases is completely normal. The mesentery and the intestinal serosa are often covered with a fibrinous deposit, and the coils of the small intestine are then often adherent. In many cases, the intestinal tube is intact. In most cases the pathological alterations are so characteristic that the diagnosis can easily be made.

In fresh cases typical bacilli are demonstrable in smears; but in older ones the test often demands more care, on account of involution forms of the bacilli being present. Staining with safrinin is especially suitable for demonstrating the bacilli. In the older cases animal inoculation often gives no positive result; but cultural experiment succeeds in most cases. The material should not be removed by the platinum needle, on account of the unequal distribution of bacilli in the gland; a better method is to vigorously scrape the sectional surface, and use the pieces of tissue taken away. Ascoli's method can also be successfully employed for diagnosis.

Anthrax in the pig demands the greatest care in meat inspection, as the disease is often limited to a single lymphatic gland or to a portion of one. The judgment of the flesh of anthrax carcases, especially when the disease is local, might be milder than it has hitherto been. The flesh could be declared good, conditionally upon the local character of the disease being established beyond doubt.—(*Berliner Tier. Woch.*).

Anthrax Spores in the Intestinal Contents.

G. Schäfer, in a dissertation at Stuttgart in 1912, reported some researches upon this subject, which led him to the following conclusions. In 12 out of 25 cases the presence of anthrax spores in the intestinal contents was demonstrated. Anthrax spores can, therefore, be formed in the intestine of the unopened cadaver. The development of anthrax spores in the intestinal contents is not constant, and in half the cases that were investigated they could not be found; and the process has a certain dependence upon the outside temperature.

Spore formation in the intestine of the living animal suffering from anthrax seems to take place only exceptionally. The anthrax spores possess only a relative resistance against putrefaction, not an absolute one. The bacterial investigation of the intestinal contents is not a certain method of diagnosing anthrax post-mortem, and, therefore, its general adoption in practice is not advisable. The investigation is tolerably minute, and should only be carried out in laboratories fitted for its execution. It can well be utilised along with the other accustomed methods in doubtful cases, but it gives no absolutely certain results.—(*Berliner Tier. Woch.*)

An Enzootic of Cataract in the Horse.

Cuny has reported the curious circumstances which he observed in a series of concurrent cases of cataract in various horses lodged in two stables some 50 metres apart (*Jour. de Méd. et Vét. Zoot.*). The first stable contained eight horses; and of these four were attacked by unilateral or bilateral cataract, and one by keratitis. The second stable held three horses, one of which became affected with cataract. All the animals were fed and watered exactly the same.

In the first stable, the affection first appeared in February in a nine-year-old horse. This animal had been in work for five years without showing any peculiarity to attract the attention either in his manner of working or in his exterior aspect. One day, the owner noticed that the horse vacillated in walking and moved slowly, stumbling against all the obstacles that stood in his way. The animal was blind in consequence of double cataract.

In the following May an entire horse, sixteen years old, which spent much time in the stable, showed anomalies of locomotion analagous to those of the first case, and was similarly recognised to be suffering from double cataract.

In December, a thirteen-year-old gelding was attacked by unilateral cataract.

Another horse, five years old, showed a slight opacity of the cornea and lachrymation. Although the opacity persisted, the crystalline lens did not become involved and the animal saw perfectly, the course of the affection being completely distinct from the preceding cases.

Two years later, a ten-year-old horse lost his sight, also from double cataract.

In the second stable, the affection appeared in one horse in the month of May. The cataract was unilateral in this case.

As lachrymation, photophobia, and injection and infiltration of the conjunctiva—in a word, all inflammatory phenomena—were absent, periodic ophthalmia was excluded. It is probable that the occurrences represented an enzootic of cataract, specific or not, but without any relation to periodic ophthalmia.

The question of etiology was obscure. The action of toxic products of alimentary or microbian origin was thought of; but the solid aliments were excluded from this theory, because they have always been of excellent quality. The same was not the case with respect to the drinking water, which proceeded from a pool in the farm-yard, situated at a low level and near the dung-heap. The liquid portion of the dung-heap, by reason of the inclination of the ground, ran to the pool and imparted a greenish-red colour and a repugnant odour to the water. Possibly the ingestion of toxic products was not unconnected with the enzootic; but only experimentation could warrant a conclusive judgment. It is known that cataract may be formed by the action of diverse toxic substances (naphthaline, according to Bouchard and Charrin), and even by the presence in the blood of an excess of non-toxic substances (sugar in diabetes). But, though the hypothesis of intoxication may be very seductive, serious objections may be made to it. The disease did not make its appearance coincidently with the beginning of the consumption of the water; but the animals had always drunk it, and some of them did not become affected.

An infection may also be thought of; but the absence of inflammatory phenomena deprives this supposition of value.—(*Revista de Veterinaria Militar*).

Potatoes as Food for Horses.

Forgwer recommends, as the most convenient ration for feeding horses, 15 to 20 kilogrammes of cooked potatoes with 7 to 8 kilogrammes of hay to every 500 kilogrammes of live weight. The potatoes should be washed, then cooked, and crushed while still warm. Water and shortly-chopped hay are then added to form a fairly consistent mixture. If it is desired to give the animals corn also, this is better given separately, in order that the horses may masticate it better. As potatoes ferment easily, regular cleansing of the mangers and vessels is desirable.—(*La Clinica Veterinaria*).

W. R. C.

Ligature of Blood Vessels in Foot Diseases.

Dr. A. Liautard, in his monthly pages of abstracts in the *Journal of the American Veterinary Medical Association*, writes on this subject as follows:—

This surgical interference may not, strictly speaking, be new. I have already recorded its application in some foot affections. In the report that I read in the *Receuil de Paris*, by Army Veterinary Major J. Descazeaux, I find it of sufficient importance to warrant consideration.

In effect the report refers to ligature of the phalangeal veins in the treatment of chronic laminitis and of contracted heels, which he says he has seen resorted to in some foot affections while he was in Brazil.

Chronic laminitis is the principal trouble in which he has used this treatment. Common in some regions, severe by its frequency and the accidents that accompany it, the loss of the services of the animal it occasions, the pecuniary depression, etc., all these conditions were favorable for experimentation and to determine what benefit might be gained by the method.

The treatment consisted in the ligature of one or of both phalangeal veins of the legs affected with chronic laminitis. It is an operation which has no bad sequelae and can be performed without fear. The preparatory steps are similar to those for neurotomy or for the ligature of the artery.

The animal having been cast, the hair is clipped, and the region disinfected. An incision is made on one or the other side of the fetlock, the vein is easily recognised, exposed, raised with aseptic silk thread and ligated. Once the ligature is applied, the central end of the vein may or may not be divided. If it is, the object is to avoid the formation of clots in that portion of the blood vessel. As a third step of the operation, the skin is sewed and a light dressing applied. Cicatrization follows rapidly, even if the skin has not been sutured. As mentioned this operation is the general technic of neurotomy or arteriotomy.

According to Mr. Descazeaux, the changes that take place in the operated foot are very interesting. They are more marked when both veins have been ligated.

"The day after the operation, the fetlock and coronet are swollen. Walking is more difficult. After a few days, this condition improves, the swelling has disappeared and locomotion is much easier. On the eighth day the foot is quite warm and the coronary band abnormally swollen. After the fifteenth day this condition is still more marked. The coronary band being quite large, the frog becomes very large, hypertrophied, elastic and soft. The rings of the wall, which were first juxtaposed, on a level with the coronary, gradually diminish, separate and extend downwards. The animal walks much easier, notwithstanding the contact of the soft frog on the hard ground. There is indeed a very marked improvement. On the twentieth day, a broad, hollow shoe can be put on and the horse, moving much better and freely, can resume work."

This is a practical record which certainly well deserves attention. The author relates briefly the experiments he has made. There were eleven cases, where single or double ligatures were applied. All the cases recovered their general usefulness in a period of time varying between twenty to thirty days, and these results speak much in favour of further trials.

While practising these experiments for the treatment of chronic laminitis, the author had the opportunity to try the operation in one case of contracted heels. With this case the results were splendid. After ten days the operated foot had a normal frog, rather hypertrophied and the movements of the animal were much improved.

In conclusion the writer says: "in chronic disease without alteration of the hoof, ligature of one vein will give a perfect improvement. In cases with alterations of the hoof the ligature of both veins is essential."

OXFORDSHIRE COUNTY COUNCIL EDUCATION COMMITTEE: SECOND REPORT BY THE AGRICULTURAL ORGANISER ON THE EPIZOOTIC ABORTION EXPERIMENTS. [Abridged.]

INTRODUCTION.—THE 1911-13 EXPERIMENTS.

The Board of Agriculture and Fisheries kindly offered to supply vaccine free of charge, to inoculate cows in iufected herds in Oxfordshire, the Local Education Authority employing veterinary surgeons to make the inoculations and undertaking to keep complete records of each animal inoculated.

Two methods of immunisation were tried:—

(1) The immunisation of non-pregnant cows or heifers with Anti-abortion A;

(2) The immunisation of pregnant animals with Anti-abortion B.

The farmer's own veterinary surgeon was employed to make the inoculations in each herd, and the following veterinary surgeons assisted in the work:—Messrs. R. Page Bull, Deddington; W. A. Bull, Banbury; H. C. Jagger, Bicester: J. M. Lund, Witney: E. P. Owen, Thame: J. H. Parker, Faringdon: A. H. Stroud, Oxford: R. J. Verney, Oxford.

The success of the experiments and the smooth working of the scheme were largely due to the active co-operation on the part of the Education Committee, Farmers, and Veterinary Surgeons.

Fourteen infected herds were selected for the experiments, and 671 cows and heifers were under observation during the period.

Tne following results are taken from the First Report, 1913:—

Before the experiments began (during 1910) 28·9 per cent. (*i.e.*, about 1 in every 4 animals) aborted.

After Anti-abortion A treatment 6·3 per cent. (*i.e.*, about 1 in every 15 animals) aborted.

After Anti-abortion B treatment 15·1 per cent. (*i.e.*, about 1 in every 7 animals) aborted.

Among those not inoculated and left as "Controls," 19·1 per cent. (*i.e.*, about 1 in every 5 animals) aborted).

The A treatment therefore reduced the abortions from about 28 per cent. to about 6 per cent.

A detailed report and analysis of the results in each herd is included in the First Report, which may be obtained on application to the Agricultural Organizer, County Offices, Oxford.

1914-1916 Experiments.

In accordance with the instructions of the Higher Education Sub-Committee, a meeting was held at the County Offices, Oxford, on Wednesday, October 1st, 1913, between the owners of the herds in which the 1911-1913 experiments were carried out, veterinary surgeons, and others interested in the experiments, and it was unanimously decided to ask the Education Committee to continue the experiments with Anti-abortion A.

The owners were so satisfied with the results of the Anti-abortion A treatment that they felt justified in expressing their willingness to pay the veterinary surgeons fees rather than to let their cows go uninoculated.

The work has therefore been continued, and owing to the kindness of the Board of Agriculture and Fisheries, who supply the vaccine free of charge, any dairy farmer in Oxfordshire, whose herd is infected with contagious abortion, may have the A treatment carried out on his herd by applying to the Agricultural Sub-Committee. The Agricultural Sub-Committee undertake to make all arrangements, to supervise the work, and to keep complete records of each animal inoculated, on condition that the farmer undertakes to pay the veterinary surgeon's fee.

During the period 1914-1916 over 1289 animals in 38 herds have been inoculated. According to the Returns of the Board of Agriculture and Fisheries there were 22,615 cows and heifers in milk and in calf in Oxfordshire in 1915. It is probable that only a few of the infected herds have come within the scope of these experiments.

Map of Oxfordshire showing the location of The Herds under Treatment 1914-1916.

Continuation of the A treatment on the 14 herds included in the 1911–1913 experiments.

It was decided to continue the A treatment in some if not all of the 14 herds inoculated during the period 1911–1913; the object being to find out if possible how long it is necessary to continue the inoculations on a farm, and also whether one inoculation is sufficient to immunise an animal for longer than one pregnancy.

The procedure on the majority of the farms has been to inoculate every "empty" animal during the first year and then to inoculate all heifers and bought-in cows each year afterwards, until abortions cease to occur.

On a few of the farms every empty animal has been immunised for two years running.

General results of the continued treatment.

The general result of the first season's work on the 14 herds was to reduce the number of abortions from about 28 per cent. down to about 6 per cent., and the continuation of the work, as outlined above, has brought about a further reduction to less than 2 per cent.– a percentage which might quite well be expected apart altogether from contagion.

As most of the animals in the herds had been inoculated by the year 1914, difficulty was experienced in selecting controls for the 1914-16 work, and they had to be made up from the heifers and bought in cows. The majority of the bought in cows appeared to abort unless they were inoculated when empty. It is probable that the high percentage of abortions amongst the controls for 1914–1916 is due to the inclusion of these bought in cows. Very few of the animals which were inoculated during the period 1911–1913, and were not inoculated again, aborted at subsequent pregnancies. It is not possible to state the numbers of such cases as percentages because the cows were being continually sold off the farms, but the last column in the above table shows that very few indeed of these cows aborted.

Of 237 animals which were immunised in the period 1911–13 only six can be traced to have aborted in the period 1914-1916, so that the one inoculation appears to have been sufficient to immunise the majority of the animals for longer than one pregnancy.

The information obtained from a study of the results in each individual herd appears to point to the following conclusions:—

It is necessary to continue the inoculations for a time on the infected premises after abortions cease to occur.

Inoculations should be carried out in an infected herd until abortion has ceased, but if the herd is one

Table showing Abortions in percentages on each farm and effect of Continued Treatment.

	1911–1913 Treatment.			1914–1916 Continued Treatment.		
Farm.	Before treatment.	Controls.	After A-A. A.	Controls.	After A-A. A., animals not previously inoculated.	Abortion during 1914-1916 among animals inoculated 1911-1913 and not inoculated again. Cases.
A	75·0	25.0	4·3	33·3*	0·0	1
B	37·5	16·6	0·0	36·3*	11·5	0
C & D	27·5	9·0	6·2	20·0*	0·0	0
E	30·0	13·3	6·4	47·6*	2·0	1
F	17·1	36·3	27·2	3 cases*	0.0	0
G	6·6	33·3	0·0			
H	45·0	20·0	14·2	Treatment discont'd 1913.	No Abort'ns 1914–1916.	0
I	20·0	38·0	15·5	" " 1913.	" 1914–1916.	0
J	22·5	0·0	8·3	" " 1913.	12 Abortions 1914–1916.	4
K	24·0	11·1	25·0	7·6*	0·0	0
L	25·7	8·3	0·0	Treatment discont'd 1913.	No Abort'ns 1914–1916.	0
M	23·3	20·0	0·0	" " 1913.	1 case 1914–1916.	0
N	23·0	21·4	2.5	2 cases	0·0	0
Average:	28·9	19·1	6·3			

* The Controls that aborted 1914-1916 were mainly bought in animals.

which is re-stocked by buying in fresh non-pregnant animals, these animals should always be inoculated.

If pregnant animals are bought, they may re-introduce infection.

Although very few of the animals which have been immunised for one pregnancy have aborted at subsequent pregnancies, it appears that if an animal is immunised for two pregnancies running, there is very little chance of the animal aborting afterwards.

Experiments 1913-1916.

Oxfordshire dairy farmers whose herds are unfortunately suffering from contagious abortion, having heard of the results of carrying out the treatment on other herds in the county, show themselves very ready to participate under the scheme, and consequently fresh herds are being included from time to time.

At the present time the treatment is being carried out in 24 additional herds, and the returns are available from 13 of them. It must be understood, therefore, that this report leaves out of account the results in another 11 herds and of 444 inoculated animals which have yet to calve. Fresh infected herds are continually being brought under the scheme and inoculations are being made month by month for which no returns are yet available.

RESULTS, 1914-1916, IN 13 FRESH HERDS.

	Animals.	Aborted.	Barren, died, or sold.	Calved correctly.
A-A. A treatment	600	29	99	472
"Controls"	416	82	21	313

Summary.

Before the experiments began (during 1913) over 30 per cent. (*i.e.*, at least 1 in every 4 animals) aborted.

After the A treatment 5·7 per cent. (*i.e.*, about 1 in every 17 animals) aborted.

Among the controls 20·7 per cent. (*i.e.*, about 1 in every 5 animals) aborted.

As in the 1911-1913 experiments, there was a tendency to inoculate all the animals it was thought would be most likely to abort, and to leave older animals as controls. The majority of the animals left as controls were in calf when the treatment was commenced.

Briefly, in one season the treatment has cut down the number of cases of abortion from above 30 per cent. to about 5 per cent. This is a similar result to that obtained with the A treatment in the 1911-1913 experiments.

EFFECT OF THE A TREATMENT ON ABORTED COWS.

140 of the inoculated cows had previously aborted.
20 of the cows left as controls had previously aborted.

	Animals.	Aborted.	Barren.	Calved correctly.
A-A. A treatment	140	11	32	97
Controls	20	5	5	10

10.1 per cent. (1 in every 10) aborted again, *i.e.*, under Anti-abortion A treatment.

33.3 per cent. (1 in every 3) of those left untreated as controls aborted again.

After deducting the cows that had aborted previously from the total inoculated cows and total controls a result is obtained for the cows which had not previously aborted, viz. :—

4·5 per cent. (1 in every 22) aborted after A-A. A treatment.

20·2 per cent. (1 in every 5) of those left as controls aborted.

Comparing these figures with those for the cows which had previously aborted it is found that the percentage of abortions after inoculation amongst cows which had not previously aborted is to that amongst cows which had previously aborted as 1 : 2·2.

NOTES.

As in the 1911-13 experiments there were several herds in which some of the cows kept turning to the bull and difficulty was experienced in getting them in calf. The trouble occurred amongst both the untreated and the inoculated, and in these herds the owners had been troubled with their cows turning to the bull for some time before the A treatment was commenced.

There is sometimes a slight fall in the yield of milk after the inoculation, but there is usually a quick return to the normal yield.

Slight swellings were noticed in some cases after inoculation. The swellings disappeared in about three months.

Anyone interested in the results at any one farm or farms may be put into communication with the owners on application to the Agricultural Organiser, County Offices, Oxford.

My thanks are due to the farmers who have so willingly placed their herds at the disposal of the Committee for the purposes of the experiments, to the Veterinary Surgeons who have so loyally helped to make the work a success, and to Mr. P. Elford, M.A., the Education Secretary, for his kindly advice at all times. I also wish to take this opportunity of again thanking the Board of Agriculture and Fisheries for enabling the experiments to be carried out, and for their great kindness in providing the material for the inoculations free of charge.

G. R. BLAND, *Agricultural Organizer.*

County Offices, Oxford, June, 1916.

[We are indebted to the courtesy of the Agricultural Organiser for a copy of this Report, which we have given almost in full, but omitting case details, diagrams, and two tables.]

VICTORIA VETERINARY BENEVOLENT FUND.

Our failure by only a few votes at the recent poll to secure the election of Laurence B. Farr to the London Orphan School has caused great disappointment to Mrs. Farr and to all those who have interested themselves in this deserving case. At the election in January next we must work again to ensure success.

Mr. Shipley has been in communication with Mr. Armger, the Secretary of the London Orphan School, and has ascertained that in the event of the Victoria Veterinary Benovolent Fund being willing to offer payment of the sum of £15 the Managers of the School will favourably consider the application for the boy to be admitted to the School next term, commencing in September.

It will be recognised that the V. V. B. Funds cannot be expended in this way, even if the money were in hand. The solution of the difficulty seems in bringing these facts to the notice of the profession and in asking for their kindly help by sending small subscriptions for this good cause.

Will members kindly respond to this brief appeal and forward their subscriptions promptly to :

W. SHIPLEY, Esq., Southtown, Gt. Yarmouth, or to P. J. L. Kelland, Esq., 4 Whitehall Place, S.W.

August, 1916. SYDNEY H. SLOCOCK.

Dr. Willoughby, medical officer of health for the Port of London, reports that during last year 42,491 rats were caught and destroyed in dock warehouses and vessels in the docks and rivers.

The Amble—a lost pace.

It is questionable whether a horse in a state of nature has more than two paces—the walk and the gallop. A horse in a grass field trots when he is exercising himself, but this is doubtless the result of his education. There is reason to believe, too, that even if he had not been taught to trot the acquired habit of generations has so far become hereditary that he would trot without any special training. But inherited habits wear out and disappear in time, of which we have a singular instance in our English horses. How far the Spanish walk and other riding school exercises were hereditary, it is difficult now to say, since the "school" methods have been so long neglected here; but there is some ground for believing that there would be an hereditary disposition to learn. The amble was decidedly transmitted from one generation to another; but in England now there is no trace of the ambler to be found.

Chaucer tells us, of the Wye of Bathe, that "upon an amblere esely she sat," which line conveys to us the idea that in those days of bad roads the ambler was the easiest conveyance for a long journey. And when roads are rough, and long distances have to be covered on horseback, the amble is the most comfortable of all paces. But in England in these days our journeys on horseback are short in distance, and covering a lot of ground in a given space of time is a secondary consideration. So the ambler is no more seen amongst us, though why it is unpopular in England was a puzzle to that great authority, Capt. Horace M. Hayes, who generally found a reason for everything connected with horses. The amble is described by Capt. Hayes as "a pace of two time, which consists of the alternate movements in progression of the right and left (or left and right) pair of legs." And he tells us that it was a favourite pace with Napoleon I. It still survives in the United States, where the single foot horse, as he is called there, is a great favourite with many people. It is a favourite pace with the Kentucky saddle horse, and is highly praised in America, where it is sometimes termed "racking," as the most comfortable pace for a long journey. An American writer, Mr. John H. Wallace, gives a description of it perhaps a little more distinct than that of Capt. Hayes. "In this movement," he says, "the hind foot strikes the ground an instant before the forefoot on the same side, then the other two feet move and strike in the same way; thus there are four strokes in the revolution, in pairs."

Whilst the amble is faster than the trot, Gervase Markham says of it that "it is that smooth and easy pace which the labour and industry of an ingenious brain hath found out to relieve the aged, sick, impotent, and diseased persons, to make women undertake journeying, and so, by their community, to grace society," and he goes on to tell us that "ambling was found out for the general ease of the whole world as long as there is either pleasure or trade or commerce amongst people." "Pleasure and trade and commerce among people" we still have in plenty, but in England we no longer have the amble.—*Live Stock Journal.*

During a trial in a country village the local blacksmith was required as a witness. A messenger was dispatched to fetch him, and he soon came straight from his work, hot, dusty, and dirty. The fastidious judge noticed this, and remarked severely, "Look here, my man, what do you mean by coming into court in this state? How long do you wear your shirts?"

The smith flushed. "Just about down ter me knees, guv'ner. 'Ow long do you wear yours?"

Paraffinum Liquidum B.P., and some American products.

The following is part of an article which appeared in *The Lancet* of last week:—

That American refiners are quite capable of producing, and do produce, a satisfactory medicinal oil and one equal to refined Russian oil is obvious from the results below of the examination of an American sample:—

Specific gravity at 60° F.	...	0.890
Viscosity at 100° F.	...	235 secs.
Acid test	...	Excellent.
Sulphur	...	Absent.

This sample was without taste, smell, colour, or "bloom" (fluorescence). It is evident, therefore, that American refiners can produce a good medicinal oil, though for the sake of commercial advantages inferior and possibly harmful products are freely found on the market.

We have evidence to show that there have recently appeared in various parts of England oils from American sources which have been distilled from unsuitable crude material and are not refined to the extent that is desirable for medicinal purposes. We know that samples of so-called medicinal oils have been purchased in provincial towns, and also in London, at a retail price equal to that asked elsewhere for the purest oil, and these oils prove to be "thinner" than any given in the above American list. They run like water—not like oil. Their specific gravity at 60° F. is 0.850, and their viscosity averages 62.5 seconds—*i.e.*, very little more than half of what should be the minimum. The response of these fluids to the acid test is better than that of many American oils, but is capable of improvement. They are so very "thin" that they cannot possibly act as lubricants at body temperature, and are useless if not actually harmful for the purpose. If the American refiner is going to keep his good medicinal oil and send us his bad material, and if the British market is to be inundated with imperfectly refined or unsuitable oils, medical men and pharmacists should be placed on their guard.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Aug. 10.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. relinquish their commns. on expiration of engagements:—L. D. Swenerton, J. D. Deyell (July 29).

Aug. 11.

Temp. Lieuts. to be temp. Capts.:—G. Sutton, M. J. Brett, G. K. Shaw, W. H. Heaney, S. Villar, T. Russell, M. Sparrow (Aug. 1).

Temp. Lieut. D. W. Morgan relinquishes commn. on termination of engagement (Aug. 12).

To be temp. Qr.-mr. with hon. rank of Lieut.:—C. W. Saggs (Aug. 8).

Aug. 14.

Special appointment—Graded for purposes of pay as a Staff Captn.:—Temp. Qr.-mr. and hon. Lieut. J. H. Ashton, and to be temp. Capt. whilst so employed (Aug. 2).

Aug. 15.

To be temp. Lieuts.:—J. Smith, R. W. D. C. Easom, D. A. Gillmor, G. Howie, T. L. Wright (Aug. 1).

Aug. 16.

Temp. Lieut. J. McLean relinquishes his commission on termination of engagement (Aug. 2).

Temp. Lieuts. to be temp. Capts.:—T. A. McC. Finch R. B. Coutts (Aug. 2); J. F. Donnelly (Aug. 3); J. Edgar (Aug. 4).

To be temp. Lieut:—J. D. Coutts (July 31).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Aug. 10.

Lieut. to be Capt.:—Q. A. Stewart (June 2).

Aug. 12.

Lieut. G. F. J. Prickett relinquishes his commission on account of ill-health (Aug. 13).

Aug. 14.

Lieuts. to be Capts.:—G. W. Balfour (May 16); C. F. Shawcross (July 15).

Aug. 15.

Lieuts. to be Capts.:—R. Bennett (July 2); H. E. Jackson (July 13).

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1916 to the College funds:—

H. B. Allen, Accrington	£1	1	0
R. F. Bett, Capt. A.V.C.	1	1	0
Wm. Crawford, Leeds	1	1	0
C. H. Delacherois, Sandford, nr. Bristol	1	1	0
Hermann Gibson, Capt. A.V.C.	1	1	0
F. J. Motton, Lieut. A.V.C.	1	1	0
F. Richardson, Capt. A.V.C.	1	1	0
T. W. Rudd, Lt.-Col. A.V.C.	1	1	0
R. Glave Sanders, Penzance	1	1	0
Samuel Smith, Horsham	1	1	0
Wm. Watt, Lieut. A.V.C.	1	1	0
Previously acknowledged	722	5	6
	£733	16	6

OBITUARY.

W. L. WEIGHILL, M.R.C.V.S., Weston-Super-Mare.
Graduated, Edin: April, 1886.

Mr. Weighill's death occurred on Aug. 7th, Aged 53.

The late Dr. Leonard Pearson.

On June 20 there was unveiled a tablet to the memory of Dr. Leonard Pearson, formerly a professor in the veterinary school, at the University of Pennsylvania, and dean of its faculty. The exercises were held in the library of the veterinary school.

Dr. L. A. Klein, the present dean, spoke on "Leonard Pearson—His Work for Education for the State and for the Nation."

William H. Caldwell, secretary of the American Guernsey Cattle Club, spoke on "Leonard Pearson—His Interest in the Farmer and His Problems."

Dr. C. J. Marshall, state veterinarian, spoke on "Leonard Pearson—The Man."

The tablet was presented on behalf of the Guernsey Breeders' Association by Dr. E. T. Gill and accepted on behalf of the University by Provost Edgar F. Smith. It has been erected in the archway of the veterinary building, and is inscribed as follows:

"To the memory of Leonard Pearson, B.S., V.M.D., M.D., Eminent as a Veterinarian, Scholar, and Lover of Mankind, through whose breadth of vision and untiring efforts these buildings were made possible; whose appreciation of the needs of Animal Husbandry kept him in sympathetic touch with the farmer, and whose achievements will always be an honour to his Alma Mater, this tablet is affectionately dedicated by the Guernsey Breeders' Association."—*Jour: of Amer: Natl: V.M.A.*

A VOLUNTEER FOR THE A.V.C.

The following is the copy of a post card received by a veterinary practitioner recently from the sister of the local horse slaughterer:—

Dear Sir,—will you be so kind as to give my Brother Thomas Blank a Character for Dressing & Desecting Carcases for he is tring to get into the A.V.C.
hoping you will do your best

A. BLANK.

[Quite likely to be a useful man. Does our correspondent forget that the Corps is not wholly composed of officers?]

Protective inoculation.

The following fragment of history is taken from an address on "Immunity against infectious disease," by E. J. McWeeney, M.A., M.D. (N.U.I.), D.P.H., F.R.C.P. Irel., Professor of Pathology, University College, Dublin, (Examiner in Pathology, Class C., R.C.V.S.). There are still persons who profess disbelief in the value of protective inoculation, who do not hesitate to advertise their ignorance, and who, whilst emphasing the failures in certain directions, carefully omit to note the successes in others. The piece of evidence which is given here has a value of its own in this connection. The address is printed in *The Lancet* of Feb. 6, 1915.

"I reproduce results reported by Sir William Leishman to the International Medical Congress held in London in August, 1913. . . . .

"From another table in which Leishman sets forth the typhoid incidence and mortality in India for the past 23 years, we find that in 1902 there were 1012 admissions with 260 deaths: in 1903, 1366 admissions with 292 deaths: and in the following years, the deaths steadily declined:—265, 213, 224, 192, 191, 112, 45, 22, to 26 on 118 admissions in 1912, and a statement has since appeared to the effect that in 1913 the deaths from typhoid in our Indian army were reduced to 3."

"Leishman then proceeds to disclaim the view that this great diminution is exclusively ateributable to the inoculations. He says, 'Improvements in general sanitation, improved methods of diagnosis, the detection and isolation of 'carriers,' have undoubtedly all played a part; but my strong personal conviction, shared, I am glad to know, by many of my brother officers, is that the reduction is in the main due to the extended employment of anti-typhoid vaccine.'

History of the method in America.

"The remarkable results that have been achieved in the American army by the use of the method are mainly due to the energy and perseverence of Major F. F. Russell, M.D., Professor of Bacteriology in the United States Army Medical School, Washington, who has recorded his experiences in a valuable paper The fearful havoc wrought by typhoid among the American troops during the War with Spain called imperatively for active measures, and in 1908 Major Russell was directed by his chief, Surgeon-General O'Reilly, to proceed to Europe and familiarise himself with the technique of the preparation of the vaccine. Russell accordingly betook himself to London, where he worked under Leishman and his assistants, and brought home the necessary experience, and the special strain of typhoid (Rawlings) used in the preparation of the British army vaccine. The following year Russell began by inoculating his own laboratory staff. The news spread, and practically all the medical officers in and about Washington volunteered and sent their wives, children, friends and servants. Then the corps of hospital attendants came in, and by the end of 1909 there had

been vaccinated 1887 persons. The following year 16,073 people were done. During 1911 the influx of volunteers still continued, and the authorities, fortified by the experience of 20,000 vaccinations without a mishap, felt justified in making it compulsory upon all that were to participate in the manœuvres on the Mexican frontier. The order was issued in March, 1911. The results achieved fully justified the step taken. Major Russell refers to the three divisional camps near the border, each camp being in full occupation for four months. At the Galveston (Texas) Camp there were 4500 men, at San Diego (California) 3000, and at San Antonio 13,000. At Galveston, though there were 102 cases of typhoid amongst the civil population (with whom the soldiers mixed freely), *there were no cases amongst the troops*. From San Diego only two cases were reported, one of which was doubtful. Major Russell draws an interesting comparison between the experience at the San Antonio camp in 1911 and that in Jacksonville (Florida) in 1898. These two camps, each of approximately equal size, were maintained for the same length of time. They were situated in the same latitude, and each had artesian well water of excellent quality. Yet in 1898 there were over 2500 cases of typhoid at Jacksonville, with 248 deaths, on a strength 10,759 men, while at San Antonio in 1911, on a strength of 12,801 men, there only two cases with no fatality.

Nor was the possibility of infection lacking, for during the duration of the camp there were 47 cases of typhoid with 19 deaths reported among the civil population, with whom the military freely mixed. Every allowance being made for improved sanitary measures and the fact that the 1898 camp was in war time, whilst peace prevailed in 1911, the result must be looked upon as signal evidence of the power of inoculation to save encamped troops from this disease."

A Question of Warranty.

Fenning Brook, farmer, Henley, sued Sidney Alexander Kenney, farmer, of the same place, to recover £7 19s. 6d., loss incurred owing to an alleged breach of warranty in respect of a milch cow. Mr. J. M. Martin appeared for the plaintiff, and Mr. H. S. Gotelee for the defendant.

Mr. Martin said the parties were friends, and had had several deals. On March 20th defendant offered plaintiff a cow, with calf, as he had no one to look after it. He warranted it "all over right," but after it came into plaintiff's possession it was found to have lost a quarter. On March 28th the cow was sold at Ipswich, and plaintiff now claimed for the difference between the amount realised at the sale and £25, which was what he gave defendant for the cow. When a person purchased a milch cow he was entitled to have four teats on the udder, but in this case there was only three. The fourth teat was wasted, and gave no milk.

Plaintiff stated that he asked defendant to take the cow back, and said he was prepared to lose £5. Defendant, however, said he did not want the cow, which was worth more than what plaintiff had given. He was unaware of the defect. Plaintiff considered that this was due to an old-standing complaint: £25 was about the average price of a good cow.

John Pulham, plaintiff's milkman, said one quarter was shrunk, and he could not milk it.

Defendant said plaintiff examined the cow before buying, and did not ask for a warranty. He (defendant) did not give a warranty. He asked plaintiff £30 for the cow, but defendant said: "She is not a good 'un, so I will give you £25 cash down." The cow's udder was all right when sold.

In cross-examination, defendant admitted that he knew nothing about the condition of the cow, except what his men told him. Plaintiff kept the cow several days, and its defective condition must have arisen after plaintiff received it.

Thomas Markwell, defendant's stockman, said the cow calved three weeks and a day before it was sold. There was nothing wrong with the udder, and he got milk from all four quarters.

Replying to Mr. Martin, witness said a cow could be spoilt in regard to milking in three days.

Thomas Markwell, senr., also in defendant's employ, said, in 48 hours a quarter might dry up if the cow was not milked clean.

His Honour said defendant said that day he thought the cow when sold was all right, and no doubt he told plaintiff that, which led him to make only a cursory examination. It was suggested that the cow went wrong after sale, but that was highly improbable. Plaintiff was willing to lose £5 if the cow was taken back, but defendant refused. He thought plaintiff was entitled to judgment.

Judgment was accordingly entered, with costs.—*East Anglian Daily Times.*

The future of Light Horse Breeding.

Mr. John R. Keeble, of Brantham Hall, Manningtree, Essex, writing to the *Live Stock Journal*, says:

"When things have settled down, and it is found that horses are again wanted for the Army, I suggest it would be wise for the Government to buy largely in the breeding districts—in fact, to secure everything that was suitable at a fair price. After they had been handled and sorted over, to sell by auction, all that were not wanted for immediate use. Three-year-olds might be sold subject to a £10 bonus if they passed their inspector in a year's time. Four-year-olds might be treated in a similar way, subject to a £7 bonus, and after that a £5 subsidy as long as fit, or up to ten years old.

If this were done on a large scale (and the larger the better) in a few years time it would mean a big reserve of suitable horses immediately available on emergency. Nor should it prove very costly, as young horses disposed of with a Government warranty would sell like hot cakes. What we found as Government buyers at the commencement of the war was a difficulty in the first rush to get everyone supplied and get the units away. (One day we bought over 130 horses, but kept no account of rejections.)

Now as to breeding the required animals. If farmers were assured that all suitable three-year-olds would be bought when offered at a remunerative price they would try and produce what was required. Of course, many more stallions would have to be supplied, but it must not be imagined that R.H.A. and R.F.A. horses are by thoroughbreds. If a certain amount of half-bred two-year-old stallions, bred on the lines the Hunters' Improvement Society have been advocating, were bought by the Government every year at £200 each, as I believe they have done or are doing with the Irish draught horse in the sister isle, this would be an incentive to everyone to try for the best. These or Hackneys would be more suitable for artillery than thoroughbreds.

It must not be lost sight of that a great proportion of the stallions used in Germany are half-bred, and although in the past they have been good customers for some of our best racehorses, these have been used, to some extent at least, for producing half-bred stallions to distribute all over the country. Over there every farmer was encouraged to produce horses suitable for the Army, not only by free and cheap services, but also by being sure of a market for the produce."

"Speaking locally, there is no shortage of brood mares; there have been too many cast from the Army for that. I bought five early on in the war; three had gone under

in the lines because they were too young (two four-year-olds and one three-year-old), and two other well-bred mares that had evidently had jockeys up and knew how to get rid of them. The late Mr. G. M. Sexton used to tell of a Suffolk cart mare that bred him eleven foals by eleven different thoroughbred horses, and he never sold one of them as a matured hunter under £100, and some made up to £200. Then there are plenty of thoroughbred mares worth very little, but if put to a suitable Shire stallion would breed something useful and perhaps high-class. There is no difficulty in breeding the horses; the trouble is in getting a remunerative market for them when bred."

SULPHATE OF AMMONIA.

Board of Agriculture and Fisheries,

3 St. James Square, S.W.

The attention of farmers is drawn to the opportunity which now presents itself of obtaining Sulphate of Ammonia at a reduced rate during August and September.

* Reduced Rate during August and September.

The Board are informed by the Sulphate of Ammonia Association that Sulphate of Ammonia (24½ per cent. Ammonia) will be offered for sale from now to the end of September at 15s. per cwt. net cash, on condition that the quantities purchased at this reduced rate are removed from sellers' works by the 30th September, 1916. Quantities exceeding 15 tons to be taken in equal monthly deliveries during August and September.

Price for 1916-17 Season.

After that date, the price for home sales of Sulphate of Ammonia during 1916-17 season will be 15s. 6d. per cwt. net cash.

The goods will be delivered free on rail at makers' works in makers' bags, 3d. per cwt. being allowed if buyers supply their own bags.

Farmers are strongly recommended to take advantage of the reduced terms offered by the Association, as they will thereby facilitate delivery and also secure supplies which, owing to the increased requirements of the Ministry of Munitions, may not be so easily obtainable next year.

Under favourable weather and soil conditions Sulphate of Ammonia is a very suitable autumn manure for cereal crops.

Nitrogenous manures are most effective in increasing the yield of cereal crops and are also of great use for most other crops, especially grasses, potatoes, mangels, turnips, and cabbages.

**Sulphate of Ammonia, which is produced in this country, is now the cheapest and most available form of nitrogen for agricultural purposes.*

**The quantity of Sulphate of Ammonia used by farmers in the United Kingdom could be doubled with profit to themselves and advantage to the State.*

*Leaflets dealing with the use of Sulphate of Ammonia may be obtained free of charge on application to the Secretary, Board of Agriculture and Fisheries, 8 Whitehall Place, London, S.W.

11th August, 1916.

[* Will members R.C.V.S. in agricultural practice pass on this information where desirable?]

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
Gt. BRITAIN. Week ended Aug. 12	7	9			...	...	21	40	2	80	58
Corresponding week in 1915 ...	7	9			...	...	7	20		59	267
Corresponding week in 1914 ...	11	11			...	2	5	6	1	61	224
Corresponding week in 1913 ...	6	7			2	2	34	54	2	61	551
Total for 33 weeks, 1916	360	424	1	24	34	87	1679	3770	180	3175	8532
Corresponding period in 1915 ...	407	467			35	64	‡557	‡1221	159	2871	12853
Corresponding period in 1914 ...	505	546	11	74	70	216	1516	2628	151	2711	28412
Corresponding period in 1913 ...	367	402			110	286	1880	3797	127	1634	21903

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :— Excluding outbreaks in army horses.

Board of Agriculture and Fisheries, August 15, 1916

IRELAND. Week ended **Aug. 5**	...	...	...	...	...	...	Outbreaks 1	3	4	25
Corresponding Week in 1915 ...	...	...	...	...	...	...	2	2	3	16
Corresponding Week in 1914 ...	...	...	...	...	...	...	1	4	2	8
Corresponding Week in 1913 ...	...	...	...	...	...	...	1	1	5	19
Total for 32 weeks, 1916 ...	3	7	...	...	...	...	45	257	204	1208
Corresponding period in 1915 ...	1	1	...	...	1	3	46	270	165	926
Corresponding period in 1914 ...	1	1	76	957	...	...	56	379	144	720
Corresponding period in 1913 ...	...	...	...	...	...	...	94	353	103	508

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug. 7, 1916.

Note.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection